

RESOLUTION NO. 2020-39

A RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AUTHORIZING THE VILLAGE MANAGER TO ISSUE A WORK ORDER TO EAC CONSULTING, INC. FOR ENGINEERING, SURVEYING, AND MARINE BIOLOGICAL SERVICES RELATING TO THE BEACH NOURISHMENT PROJECT IN AN AMOUNT NOT TO EXCEED \$80,000; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Village of Key Biscayne ("Village") issued Request for Qualifications No. 2016-02-09 ("RFQ") for continuing professional engineering services; and

WHEREAS, pursuant to the RFQ, the Village Council selected EAC Consulting, Inc. ("Consultant") as one of the consultants to provide continuing professional engineering services and authorized the Village Manager to execute an agreement with Consultant; and

WHEREAS, on October 30, 2018 and on August 27, 2019, the Village Council adopted Resolution Nos. 2018-51 and 2019-52, respectively, approving the issuance of work orders to Consultant for engineering, surveying, and marine biological services relating to annual monitoring of the 2017 beach renourishment project (the "Project"); and

WHEREAS, Consultant has provided a proposal, attached hereto as Exhibit "A," (the "Proposal") for engineering, surveying, and marine biological services relating to the third year of annual monitoring of the Project; and

WHEREAS, the Village Council desires to authorize the Village Manager to negotiate and issue a work order for the Project consistent with the Proposal attached hereto as Exhibit "A" and the professional services agreement entered into between the Village and Consultant; and

WHEREAS, the Village Council finds that this Resolution is in the best interest and welfare of the residents of the Village.

NOW, THEREFORE, BE IT RESOLVED BY THE VILLAGE COUNCIL OF

THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. That each of the above-stated recitals are hereby adopted, confirmed, and incorporated herein.

Section 2. Authorization. The Village Manager is hereby authorized to negotiate and issue a work order to Consultant for the Project consistent with the Proposal attached hereto as Exhibit "A" in an amount not to exceed \$80,000.00.

Section 3. Effective Date. That this Resolution shall be effective immediately upon adoption.

PASSED and ADOPTED this 9th day of June, 2020.

ATTEST:


PETER J. KULPA
INTERIM VILLAGE CLERK




MICHAEL W. DAVEY, MAYOR

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:


WEISS SEROTA HELFMAN COLE & BIERMAN, P.L.
VILLAGE ATTORNEY



EAC Consulting, Inc.

April 30, 2020

Andrea Agha, aagha@keybiscayne.fl.gov
Village Manager
Village of Key Biscayne
88 W. McIntyre St, Suite 210
Key Biscayne, FL 33149

Re: VKB Beach 2017 Re-Nourishment – Year 3 (2020) Post Construction Biological and Physical Monitoring Services and Pre-Construction Surveys

Dear Ms. Agha:

EAC Consulting, Inc., as part of its Continuing Services Contract with the Village's respectfully submits these services to perform the following tasks as mandated by the Florida Department of Environmental Protection (FDEP).

These monitoring efforts are required to ensure compliance with issued regulatory permits and conditions.

Background

In 2017, the Village of Key Biscayne completed Beach Nourishment improvements along the VKB Beach coastline. The project location was within the Village of Key Biscayne between FDEP survey control monuments R-102 and R-108, approximately 5,425 feet (1,654 meters) of coastline, with control monitoring site located south of R-110, north of R-100.

A Biological Monitoring Plan (BMP) was prepared in support of the project. The goals of the BMP include delineating the western edge of the nearshore seagrass community offshore of the project area and estimating percent cover and species composition of seagrasses along perpendicular permanent transects within the project area.

The Miami-Dade County Regulatory and Economic Resources (RER), FDEP, and United States Army Corp of Engineers (USACE) permits require biological monitoring in accordance with the approved project specific BMP. The purpose of the monitoring is to identify unanticipated adverse impacts to submerged aquatic resources that result from construction and/or equilibration of the 2017 beach re nourishment project.

Scope of Work

The scope of services will be provided by our team including our sub consultants - *Olin Hydrographic Solutions, Inc* providing water based hydrographic surveys, *Moffatt & Nichol* providing coastal engineering services and *Smart Sciences, Inc* providing the field monitoring. EAC will manage and administer the execution of the services and perform limited quality control of deliverables to the Village. Our scope of services comprises of the following specific tasks and items needed for completing *VKB's Beach 2017 Re-Nourishment Project – Year 3 (2020) Post Construction Monitoring Services and Surveys*.

The tasks under this fee proposal are described as follows:

Task 1: Beach Profile Surveying

- a) **Topographic & Hydrographic Survey:** Our team shall perform a hydrographic survey of for each range stations between and including Dade County DNR Monument R-100 and R-113 including the half monuments. This will include a total of 27 Survey Profiles. A topographic survey of the beach will be performed on each of these stations along the recorded azimuth using RTK GPS. The offshore portion of the work will extend out 2000 feet from the monument and will contain at least 20' overlap with the RTK survey on each profile. A survey fathometer will be calibrated for site conditions and

used to obtain water depths. Positioning of the survey vessel will be provided using Differential GPS (DGPS). Survey data will be logged, and navigation will be provided using Coastal Oceanographics' HYPACK software with an on-board laptop computer. Tidal Corrections will be managed by incorporating an RTK tides system during the hydrographic survey. Reference datum for the elevations will be NAVD 88.

(This scope of work will be performed by Olin Hydrographic Solutions, Inc)

- b) **Base Map and DEP Reporting:** Our team shall perform the post processing of the hydrographic survey data and convert to a digital terrain map DTM of the subsurface topography for use in future volume calculations. The water depths will be aligned in an AutoCAD drawing with any electronic land survey or rectified aerial photograph. The data will be tabulated, and a survey report generated which conforms to the DEP Bureau of Beaches and Coastal Systems (BBCS) Statewide Coastal Monitoring Program, Regional Data Collection and Processing Plan, dated March 2001.

(This scope of work will be performed by Olin Hydrographic Solutions, Inc)

- c) **Sea Grass Mapping:** Our team shall map the extents of the seagrass for this project. It is envisioned that 2 days will be required to complete this task. Our team shall utilize a Trimble RTK-GPS to position the sea-grass extents to capture any associated attributes. The survey data will be reduced and supplied to in a format that to incorporate into drawings and reports

(This scope of work will be performed by Olin Hydrographic Solutions, Inc)

Task 2: Year 3 Biological Monitoring Survey

Our team shall conduct a biological monitoring survey to delineate the approximate western extent of seagrass and a qualitative survey for seagrass in accordance with the BMP for Village of Key Biscayne Beach Nourishment Project revised May 15, 2018. The survey limits are from FDEP survey control monuments R-102 through R-108 with control areas south of R-110 and north of R-100 and shall follow the methodology for marine benthic surveying based on the National Marine Fisheries Service (NMFS) Recommendations for Sampling *Halophila Johnsonii* at a Project Site (NMFS, 2002), using the "large area" protocol and consistent with past survey methods using the Braun Blanquet (BB) technique.

The western seagrass edge mapping shall occur adjacent to the re-nourishment area between FDEP survey control monuments R-102 and R-108. Approximately 5,425 feet (1,654 meters) of shoreline shall be surveyed to locate the western extent of the submerged aquatic vegetation (SAV). The western edge shall be delineated and recorded using Differential Global Positioning System (DGPS) for analysis and mapping purposes.

The BMPs require completion of the field surveys between June 1 and September 30; July is noted in the FDEP BMP as the preferred month, in the middle of the designated seagrass growing season.

Snorkeling and SCUBA will be utilized for all transects and shoreline delineation. Tidal conditions may influence the pace and rate of speed at which the effort can be accomplished. Should adverse conditions be encountered, additional time may be required. This would be necessary if extreme tides, Village events, marine/pedestrian traffic, and/or poor visibility are encountered, which would make surveying this area dangerous and pose a safety risk to staff. ***Please note that Additional time if required to survey these areas shall require additional fees.***

This task also includes planning, coordination, and mobilization activities for field surveys, as well as safety briefing(s).

(Please refer to scope of work described by our sub consultants - Smart Sciences, Inc and Moffatt & Nichol, Inc in Attachment 2 of this proposal.)

Task 3: Year 3 Biological Monitoring Survey Report

Our team shall prepare a comprehensive Post-Construction Biological Monitoring Survey Report to document results of Task 2 described previously. The reports will be submitted to FDEP, USACE and RER after the

completion of the field survey. The report will be presented in hardcopy and electronic format. In addition, all collected raw data (Excel, field data sheets in PDF, etc.) will need to be provided to FDEP, USACE, and RER electronically so that it can be used for internal evaluations.

These reports will be submitted in electronic format to the Village for review after the completion of fieldwork. The electronic file will also include the Excel and raw field data sheets in PDF.

(Please refer to scope of work described by our sub consultants - Smart Sciences, Inc and Moffatt & Nichol, Inc in Attachment 2 of this proposal.)

Task 4: Year 3 Physical Monitoring Survey

Our team shall coordinate to prepare for and execute the DERM-required 2020 Post-Construction Physical Monitoring survey required as a condition of the Class I Beach Re-nourishment Permit. This coordination includes support of survey planning logistics and review of the survey data provided. This survey data will dually be used for design of the 2020/2021 beach re-nourishment event and the pre-construction survey required by DERM and the Corps for that event.

The surveys will be conducted at FDEP reference monuments and at 500-foot intervals between R-100 and R-113 per FDEP and Corps permit requirements, which includes the Project area and the up-drift and down-drift areas. A total of twenty-seven (27) beach profiles will be obtained with topographic survey equipment from the R-monument out to wading depth. Hydrographic surveys will extend at least 3,000 feet seaward of the monument and out to -30 feet (NAVD 88), whichever is reached first, as required by FDEP permit conditions and the FDEP "Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100."

(Please refer to scope of work described by our sub consultant - Moffatt & Nichol, Inc in Attachment 2 of this proposal.)

Task 5: Year 3 Physical Monitoring Survey Report

Our team shall prepare an engineering report that will include the pre-construction, immediate post-construction, Year 2 post-construction beach profile data collected by the Project surveying sub-consultant in July 2019, and Year 3 post-construction beach profile data to be collected by the Project surveying sub-consultant in the Summer of 2020. The report will summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. In addition, the report will include a comparative review of project performance to performance expectations and identification of any adverse impacts attributable to the project. The appendices of the report will include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. The results will be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction. The report will be compiled and distributed to the environmental regulatory agencies for permit compliance within 90 days following the monitoring survey.

Task 6: Year 3 Meetings with VKB and/or Regulatory Agencies

Our team will participate shall participate in conference calls and meetings as requested by the Village and/or regulatory agencies to review monitoring results and to address questions or concerns. If additional meetings are required, these will be provided under an addendum scope/budget with VKB approval & authorization.

(Please refer to scope of work described by our sub consultants - Smart Sciences, Inc and Moffatt & Nichol, Inc) in Attachment 2 of this proposal.)

Assumptions

1. Beach maintenance access will be provided.
2. GPS data will be collected using Florida State Plane East (US Feet) projection and datum of NAD
3. 83.
4. GPS collected data will have a minimum accuracy of ten (10) feet when differentially corrected.

5. If necessary, our team will request a variance to conduct the surveys outside of the June 1 and September 30 USACE guidelines. Approval of request for variance not guaranteed.
6. Changes to the scope due to unforeseen circumstances and additional regulatory requirements shall result in additional fees.

Additional Services

Services not included in this scope include, but are not limited to the following:

1. Addressing additional data collection/analysis requested by the regulatory agencies
2. Addressing any remedial mitigation services or coordination of subsequent monitoring events
3. Additional Meetings unaccounted for in this scope of work.
4. Services to request regulatory variance to conduct surveys and monitoring activities outside of the June – September USACE guidelines
5. Additional time required to complete surveys and monitoring due to inclement weather, extreme tides, Village events, marine/pedestrian traffic, and/or poor visibility condition.

Contract Terms

It is our understanding the statement of work will be undertaken under a work order to be issued subject to the terms and conditions of the professional services agreement, dated May 20th, 2016 entered between the Village and EAC Consulting, Inc.

This scope of services is valid to be executed for sixty (60) days. While we make every effort to keep our fees within estimates quoted, additional costs may be incurred due to circumstances beyond our immediate control, including but not limited to, rule or procedural changes, project team or agency staff delays, and unforeseen circumstances.

Compensation

Compensation for the varying tasks is on a lump sum or hourly basis that is based on the following breakdown and will be invoiced on a percentage basis for lump sum tasks and hours expended for hourly tasks in accordance with the level or progress of completion at the time of billing.

Task No.	Description	Basis	Fee
1	Beach Profile Surveying	Lump Sum	\$ 24,230.00
2	Year 3 - Post Construction Biological Monitoring	Lump Sum	\$ 22,700.00
3	Year 3 - Post Construction Biological Monitoring Reports	Lump Sum	\$ 21,516
4	Year 3 - Post Construction Physical Monitoring	Lump Sum	\$ 2,040.00
5	Year 3 - Post Construction Physical Monitoring Reports	Lump Sum	\$ 8,314
6	Year 3 - Post Construction Meetings with VKB and/or Regulatory Agencies	Hourly	\$ 1,000
	Printing and Reimbursable(s):	Lump Sum	\$ 200
	Total Compensation for this Work Order:		\$ 87,337.00

80,000

(Please refer to Fee Proposal Tabulation Summary provided in Attachment 1 of this proposal.)

Schedule

The schedule for the Year 3 post-construction biological monitoring/permit compliance is approximately nine

(9) months, although the regulatory agencies sometimes take up to 1 year to review the submitted reports

Conclusion

We are ready begin working on this assignment. If the above fee proposal and the terms above are acceptable to you, please provide us with a Work Authorization// Work Order and a signed Approval (below). Please feel free to contact me if any clarifications are required. Thank you for the opportunity to be of service to the Village of Key Biscayne.

Sincerely,
EAC Consulting, Inc



Michael Adeife, P.E.
Senior Vice President

cc: File
Jake Ozyman, PE (VKB)
Tim Blankenship, P.E. (Moffat & Nichol)

AGREED AND ACCEPTED

By: _____ Date _____
Andrea Agha, Village Manager

_____, 2020
Notice to Proceed Date

Attachment No. 1

Project Number:	16008.56
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Date:	4/30/2020
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Staffhour Estimate and Fee Computation Summary

$$\begin{array}{r} 21,516 \\ 8,314 \\ 1,000 \end{array}$$

200

\$80,000

Attachment No. 2



Olin Hydrographic Solutions, Inc.

Consulting Engineering, Surveying & Mapping, and Environmental Services
2900 Calusa St. Coconut Grove, FL 33133
Phone 1 (305) 619 2800; Fax (305) 860 4411

February 27, 2020

P190516C

Dear Sir:

RE: Village of Key Biscayne Monitoring

Olin Hydrographic Solutions, Inc. (OHS) is pleased to provide this proposal relative to the services for the above-referenced project, anticipated start date June 2020.

The following parts describe the scope of work to be performed by OHS

Please note fees are inclusive of all mobilization and equipment and OHS staff have performed this same survey several times in past years.

Part I – Beach Profile Surveys

- a) **Topographic & Hydrographic Survey:** Olin Hydrographic will perform a hydrographic survey of for each range stations between and including Dade County DNR Monument R-100 and R-113 including the half monuments. This will include a total of 27 Survey Profiles. A topographic survey of the beach will be performed on each of these stations along the recorded azimuth using RTK GPS. The offshore portion of the work will extend out 2000' from the monument and will contain at least 20' overlap with the RTK survey on each profile. A survey fathometer will be calibrated for site conditions and used to obtain water depths. Positioning of the survey vessel will be provided using Differential GPS (DGPS). Survey data will be logged, and navigation will be provided using Coastal Oceanographics' HYPACK software with an on-board laptop computer. Tidal Corrections will be managed by incorporating an RTK tides system during the hydrographic survey. Reference datum for the elevations will be NAVD 88.

Fees for Part Ia services are lump sum.....\$14,250

- b) **Basemap and DEP Reporting:** The hydrographic survey data will be post-processed and converted to a digital terrain map DTM of the subsurface topography for use in future volume calculations. The water depths will be aligned in an AutoCAD drawing with any electronic land survey or rectified aerial photograph supplied by the Client for the project. Client to provide any recent available rectified aerial photography. The data will be tabulated, and a survey report generated which conforms to the DEP Bureau of Beaches and Coastal Systems (BBCS) Statewide Coastal Monitoring Program, Regional Data Collection and Processing Plan, March 2001.

Fees for Part Ib services are lump sum.....\$5,500

P190516C
Moffatt & Nichol
Key Biscayne Monitoring

- c) **Sea Grass Mapping:** OHS will work with the environmental biologist to map the extents of the seagrass for this project. After consultation with Gisele Colbert (Smart -Science) it is envisaged that 2 days will be required to complete this task. OHS staff will utilize a Trimble RTK-GPS to position the sea-grass extents as pointed out by the biologist and capture any associated attributes. The survey data will be reduced and supplied to the Biologist in a format that they are able to incorporate into their drawings and reports

Fees for Part Ic services are lump sum.....\$3,700

GENERAL

Schedule: Part I services will commence within 2 weeks following our Authorization to Proceed from the Client.

Fees: This fee proposal is valid for 60 days. OHS will invoice the Client for Part I services on a lump sum. Invoices are to be paid within thirty (30) days of receipt of the invoice by the Client. Invoices not paid within thirty (30) days and not in dispute shall incur interest at a rate of 1.5 percent per month. The Client agrees to pay any cost of collection including reasonable attorney's fees incurred whether or not a suit is commenced, or an appeal is taken.

We look forward to working with you through the successful implementation of this project. Please return an executed copy of this agreement which will serve as our Authorization to Proceed. Should you have any questions regarding this proposal, please contact me at (305) 619 2800.

Sincerely,


OLIN HYDROGRAPHIC SOLUTIONS, INC.
David Olin, P.E.
President

SIGNED: _____ DATE: _____
Moffatt & Nichol



SMART-SCIENCES
Environmental Consulting

April 21, 2020

Michael Adeife, P.E.
EAC Consulting, Inc.
815 Northwest 57th Avenue, Suite 402
Miami, Florida 33126

Sent via e-mail to madeife@eacconsult.com

**Subject: Proposal for Biological Monitoring
Village of Key Biscayne Beach Renourishment Project
FDEP Permit No. 0160846-017-JN
From FDEP Survey Control Monument R-102 to R-108, S. of R-110, N. of R-100
Village of Key Biscayne, Miami-Dade County, Florida
Smart-Sciences Proposal No. 028-026-P**

Dear Mr. Adeife:

Smart-Sciences, Inc. (Smart-Sciences) is pleased to submit this proposal to EAC Consulting Inc. (EAC) for biological monitoring for the above referenced project. At the request of EAC, Smart-Sciences will conduct biological monitoring to delineate the western seagrass edge and evaluate the composition and density of the seagrass waterward of the project location along permanent transects. This will dually serve as the "Year 3" post-construction monitoring survey for the 2017 beach renourishment event and the pre-construction survey for the 2020/2021 beach renourishment event. Included in the proposal is an outline of the project information provided to us, the scope of services, our fee, the schedule, authorization procedures, and the terms and conditions governing the project.

Background Information

The project location is within the Village of Key Biscayne between Florida Department of Environmental Protection (FDEP) survey control monuments R-102 and R-108, approximately 5,425 feet (1,654 meters) of coastline, with control monitoring site located south of R-110, north of R-100. A Biological Monitoring Plan (BMP) was prepared in support of the Village of Key Biscayne's shore protection project in Miami-Dade County, Florida. The goals of the BMPs include delineating the western edge of the nearshore seagrass community offshore of the project area and estimating percent cover and species composition of seagrasses along perpendicular permanent transects within the project area. The BMPs require completion of the field surveys between June 1 and September 30; July is noted in the FDEP BMP as the preferred month, in the middle of the designated seagrass growing season.

The Miami-Dade County Regulatory and Economic Resources (RER), FDEP, and United States Army Corp of Engineers (USACE) permits require biological monitoring in accordance with the approved project specific BMPs. The purpose of the monitoring is to identify unanticipated adverse impacts to submerged aquatic resources that result from construction and/or equilibration of the beach renourishment project. Pre-

Construction monitoring is required to document the ecological baseline conditions present prior to commencement of any construction activities for comparison with post-construction monitoring. Post-Construction monitoring is required to document the ecological baseline conditions present after the completion of beach construction activities for three years for comparison with the agency-specified pre-construction monitoring event.

The following tasks provide for the pre-construction and RER "Year 3" post-construction monitoring required in accordance with the BMPs, which include monitoring within the immediate area of the project influence, as well as monitoring control areas to document background conditions. FDEP has requested that data collected from the control transects required by other agencies be reported separately from the permit-required survey data that will be collected within the Project area.

Proposed Scope of Services

Task 1 – Biological Monitoring Survey

Smart-Sciences will conduct a biological monitoring survey to delineate the approximate western extent of seagrass and a qualitative survey for seagrass in accordance with the BMP for Village of Key Biscayne Beach Nourishment Project revised May 15, 2018. Smart-Sciences worked with Moffatt & Nichol and the FDEP to update the BMP to provide consistent data that could be statistically analyzed. The survey limits are from FDEP survey control monuments R-102 through R-108 with control areas south of R-110 and north of R-100. This effort will follow the methodology for marine benthic surveying based on the National Marine Fisheries Service (NMFS) Recommendations for Sampling *Halophila johnsonii* at a Project Site (NMFS, 2002), using the "large area" protocol and consistent with past survey methods using the Braun Blanquet technique.

The western seagrass edge mapping will occur adjacent to the renourishment area between FDEP survey control monuments R-102 and R-108. Approximately 5,425 feet (1,654 meters) of shoreline will be surveyed to locate the western extent of the submerged aquatic vegetation (SAV). The western edge will be delineated by Smart-Sciences staff and recorded by others using Differential Global Positioning System (DGPS) for analysis and mapping purposes. This effort is anticipated to take two qualified staff biologists two days to complete. Coordination with the survey crew, provided by EAC, will occur prior to fieldwork.

The qualitative seagrass community survey will occur within the same survey limits with the addition of six control transects, three located south of FDEP survey control monument R-110 and three located north of survey control monument R-100. Within the renourishment area 25 transects will be established along the western seagrass edge identified above, spaced approximate 200 feet (60 meters) apart. Each transect will extend east 115 feet (35 meters), perpendicular to the shoreline. The beginning of each transect will be located using a handheld Global Positioning System (GPS) by Smart-Sciences. Staff will document the seagrass species and estimate the density of seagrasses using the Braun Blanquet technique along each

transect. A one-square meter (1m^2) quadrat will be placed on the substrate every five meters along the north side of the transect tape and seagrass density information will be collected. Eight Braun Blanquet sampling stations will be monitored along each transect for a total of 200 qualitative measurements within the project area. If the seagrass area is a mixed bed, dominant seagrass species and other seagrass species occurring within the seagrass bed will be noted. The density estimate will be for the total seagrass coverage, not for each species separately. The biologists will also note the dominant species of attached macroalgae present within the seagrass bed, substrate composition, and take representative photographs of the survey area. Results will include calculations of density (average cover including zeros), abundance (average cover excluding zeros), and frequency of occurrence (percentage of quadrats containing seagrass) for each transect and also for the Project as a whole.

A control group composed of six additional seagrass community monitoring transects will be established approximately 2,000 feet (610 meters) south and north of the project area within Bill Baggs Cape Florida State Park and Crandon Park, respectively. Additional seagrass western edge mapping will be conducted in the control area as well. These six transects and the additional seagrass edge mapping area will be monitored using the same methods described above, resulting in a total of 48 qualitative measurements within the control areas. This information will serve as control data and will be used to distinguish natural sand displacement and natural changes in the seagrass community. The control location was selected because it closely resembles the conditions of the seagrass community within the project area, but is far enough away from the project area to not be directly influenced by transport of the beach fill material.

The qualitative seagrass community survey is anticipated to take two qualified staff biologists four to five days to complete. Snorkeling and SCUBA will be utilized for all transects and shoreline delineation. ~~Tidal conditions may influence the pace and rate of speed at which the effort can be accomplished. Should adverse conditions be encountered, additional time may be required. This would be necessary if extreme tides, Village events, marine/pedestrian traffic, and/or poor visibility are encountered, which would make surveying this area dangerous and pose a safety risk for staff. Additional time required to survey these areas will incur additional fees, subject to your approval.~~

This task also includes coordination, mobilization activities for field surveys, and safety briefings.

Task 2 – Biological Monitoring Survey Report

Smart-Sciences will prepare a comprehensive Biological Monitoring Survey Report to document results of the western seagrass edge mapping and qualitative survey conducted in **Task 1**. The report will provide a summary of the results of the biological surveys and identify any adverse impacts attributable to the 2017 project. This report will provide a comprehensive baseline data set and will summarize the results of the western seagrass edge mapping event and the qualitative seagrass community survey. A Geographic Information Systems (GIS) basemap will be prepared depicting the western edge of seagrass prior to

commencement of construction. Another map depicting the density and species distribution along the transects (25 in project area + six control) based upon the Braun Blanquet data, will also be prepared.

Per the BMPs, the reports need to be submitted to FDEP, USACE and RER within 90 days after the completion of the field survey. Reports need to be presented in hardcopy and electronic format. In addition, all collected raw data (Excel, field data sheets in PDF, etc.) will need to be provided to FDEP, USACE, and RER electronically so that it can be used for processing. The electronic file will also include the Excel and raw field data sheets in PDF.

Task 3 – Conference Calls/Meetings/Project Coordination

Anticipated activities include the following:

- Conference call with project team: EAC, Moffatt & Nichol, etc.
- Coordination/Conference Calls with FDEP, RER, USACE and the Village of Key Biscayne.
- In-person meetings with project team.

Assumptions

- Beach maintenance access will be provided.
- The fees are inclusive of equipment and reimbursable expenses.
- GPS data will be collected using Florida State Plane East (US Feet) projection and datum of NAD 83.
- GPS collected data will have a minimum accuracy of ten (10) feet when differentially corrected.
- If necessary, Moffatt & Nichol will request a variance to conduct the surveys outside of the June 1 and September 30 USACE guidelines.
- Changes to the scope may incur additional fees.

Cost of Services

Smart-Sciences proposes to perform the above scope of services for the following fee estimates:

Task Description	Cost Estimate
Task 1 – Biological Monitoring Survey	\$18,500 (lump sum)
Task 2 – Biological Monitoring Survey Report	\$15,000.00 (lump sum) \$7,494
Task 3 – Conference Calls/Meetings/Project Coordination	\$1,200.00 (hourly)

If unforeseen conditions should require services beyond the scope of services described herein, Smart-Sciences will notify you immediately of additional costs necessary to complete the project, prior to

proceeding. Services beyond those described herein will be invoiced in accordance with our standard schedule of fees at the applicable rates. Please note that payment of invoices is due upon receipt.

Schedule

For a seagrass survey to be accepted as valid by the federal permitting agencies, including the USACE and National Marine Fisheries Service (NMFS), it must be performed between June 1 and September 30. As noted above, the FDEP-preferred survey timeframe is July. Smart-Sciences will make accommodations to initiate fieldwork once notified to proceed. Smart-Sciences will provide the Biological Monitoring Survey Report (Task 2) within 90 days after concluding the field portion of the survey (Task 1). Smart-Sciences will continue to coordinate closely with EAC throughout the duration of the project.

Authorization

If the above services and fees are acceptable, please provide us with a services agreement and notice to proceed.

We appreciate the opportunity to offer our professional services on this project. If you have any questions concerning this proposal, please contact us at 786-313-3977.

Sincerely,
SMART-SCIENCES, INC



Gisele L. Colbert
Principal Scientist



2937 SW 27th Avenue, Suite 101A
Miami, FL 33133

(305) 230-1924

9699-14

May 18, 2020

Mr. Mike Adeife
EAC Consulting, Inc.
815 Northwest 57th Avenue, Suite 402
Miami, FL 33126

Via email: madeife@eacconsult.com

**Subject: CONSULTING SERVICES RELATIVE TO THE VILLAGE OF KEY BISCAYNE BEACH
RENOURISHMENT – BIOLOGICAL AND PHYSICAL MONITORING, MIAMI-DADE
COUNTY, FLORIDA**

Dear Mr. Adeife:

This is to submit a proposal for consulting services relative to the Village of Key Biscayne (Village) Beach Renourishment Project (Project). Year 3 biological and physical monitoring tasks are required in the Summer of 2020 to fulfil environmental permit conditions related to the 2017 renourishment event.

EXHIBIT "A" – SCOPE OF SERVICES

Part 1 – 2020 Biological Monitoring

- a. **Biological Survey Consultations:** M&N will consult with U.S. Army Corps of Engineers (Corps), Florida Department of Environmental Protection (FDEP), and Miami-Dade County Division of Environmental Resources Management (DERM) staff to assess the potential for the Year 3 post-construction biological monitoring survey associated with the 2017 beach renourishment event to dually serve as the pre-construction survey for the 2020/2021 beach renourishment event. M&N will consult with DERM staff to try to negotiate authorization for a summer pre-construction biological survey; this would save the Village the cost of an additional immediate pre-construction survey (as currently required in the DERM Class I Permit). M&N will additionally consult with the regulatory agencies to determine if the 2017 pre-construction data set will remain the baseline data set with DERM for the new renourishment event and if the summer 2017 post-construction biological monitoring data will remain the baseline data set with the Corps for the new renourishment event, or if the current pre-construction data (Summer 2020) will become the baseline that post-construction data will be compared against due to the past several years of storm impacts to the beach. This task does not include dialogue with the agencies regarding any impact analysis

related to post-construction monitoring data associated with the 2017 beach renourishment event. Approximately fifteen (15) hours are budgeted for this effort. If further agency consultation/negotiation is required, these services will be provided under an addendum scope.

- b. **2020 Biological Monitoring:** M&N will coordinate with Smart-Sciences, Olin Hydrographics Solutions (OHS), and the county, state and federal regulatory agencies relative to the biological monitoring event to be conducted in the summer of 2020, as well as associated analysis and reporting. July is noted as the preferred month for completion of the biological survey fieldwork in the FDEP-approved Biological Monitoring Plan (BMP) dated May 15, 2018. M&N will coordinate with Smart-Sciences, OHS, and the regulatory agencies relative to data collection methodology and analysis scope based on the updated FDEP-approved BMP. Miami-Dade County DERM requires a summer 2020 post-construction monitoring survey and report with comparison to the 2017 pre-construction data set. The summer 2020 biological survey will dually serve as the pre-construction survey for the planned Winter 2020/Spring 2021 beach renourishment event, eliminating the need for an immediate pre-construction biological survey. M&N will review, and quality control/edit the draft biological monitoring report produced by Smart-Sciences and assist in organizing the pertinent submittals to each agency, per their pre-construction and/or post-construction reporting requirements.
- c. **2020 Biological Monitoring Meetings:** M&N will participate in conference calls and meetings as requested by the regulatory agencies or directed by the Village to review the post-construction monitoring/pre-construction biological survey schedule and process and to address any questions or concerns. Approximately ten (10) hours are budgeted for this effort. If additional meetings are required, these will be provided under an addendum scope of services.

Part 2 – 2020 Physical Monitoring

- a. **2020 Post-Construction Physical Monitoring Coordination:** M&N will coordinate with EAC and OHS to prepare for and execute the DERM-required 2020 Post-Construction Physical Monitoring survey required as a condition of the Class I beach renourishment permit. This coordination includes support of survey planning logistics and review of the survey data provided. This survey data will dually be used for design of the 2020/2021 beach renourishment event and the pre-construction survey required by DERM and the Corps for that event.

The surveys will be conducted at FDEP reference monuments and at 500-foot intervals between R-100 and R-113 per FDEP and Corps permit requirements, which includes the Project area and the updrift and downdrift areas. A total of twenty-seven (27) beach profiles will be obtained with topographic survey equipment from the R-monument out to wading depth. Hydrographic surveys will extend at least 3,000 feet seaward of the monument and out to -30 feet (NAVD 88), whichever is reached first, as required by FDEP permit conditions and the FDEP "Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100."

M&N will review the following deliverables to be produced by the survey subconsultant and will submit them to the FDEP in fulfillment of the permit conditions:

Survey Report – signed/sealed by a Florida Professional Surveyor/Mapper

ASCII file containing raw x, y, and z profile data points.

ASCII files containing the profile data processed into the FDEP format.

Monument Information Report

Complete federally compliant metadata file (Federal Geographic Data Committee)

Copies of all standard field books, all computation and reduction files

- b. **2020 Post-Construction Physical Monitoring Report:** M&N will prepare an engineering report that will include the pre-construction, immediate post-construction, Year 2 post-construction beach profile data collected by the Project surveying subconsultant in July 2019, and Year 3 post-construction beach profile data to be collected by the Project surveying subconsultant in the Summer of 2020. The report will summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. In addition, the report will include a comparative review of project performance to performance expectations and identification of any adverse impacts attributable to the project. The appendices of the report will include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. The results will be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction. The report will be compiled and distributed to the environmental regulatory agencies for permit compliance within 90 days following the monitoring survey.

Deliverable: Physical Monitoring Coastal Engineering Report (signed/sealed by a Florida Professional Engineer)

- c. **2020 Physical Monitoring Meetings:** M&N will participate in conference calls and meetings as requested by the regulatory agencies or directed by the Village to review the pre-construction physical survey scope, schedule or other aspects of the process and to address any questions or concerns. Approximately nine (9) hours are budgeted for this effort. If additional meetings are required, these will be provided under an addendum scope of services.

GENERAL

Contract Terms

Refer to contract terms within the Subconsultant Agreement dated January 20, 2017, with EAC Consulting, Inc. While we make every effort to keep our fees within estimates quoted, additional costs may be incurred due to circumstances beyond our immediate control, including but not limited to, rule or procedural changes, Project team or agency staff delays, and legal actions.

Schedule

The schedule for the services is approximately eight (8) months, with the objective to begin beach fill construction by February 1, 2021, for completion of the Project prior to the May 1 start of the

2021 marine turtle nesting season. The schedule is dependent on the maintenance event authorization time frames with the county, state and federal agencies. Also, please note that the regulatory agencies sometimes take up to one (1) year to review submitted monitoring reports. Engineering design and contract document preparation will proceed concurrently with the construction bid process completed prior to issuance of final permits.

Professional Fees and Expenses

Professional Fees are summarized in Table 1. Expenses will be invoiced at cost and are estimated ~~at \$2,000.~~ 200

Additional Services

Services not included in this scope include, but are not limited to, the following:

- Addressing additional data collection/analysis requested by the regulatory agencies.
- Addressing any implied or confirmed compliance issues or unforeseen/extenuating circumstances.

If you wish for us to provide these services, please provide a work order in the standard format for this Project, which will serve as our Authorization to Proceed. Should you have any questions regarding this proposal, please do not hesitate to contact me at (786) 725-4180 or tblankenship@moffattnichol.com.

Sincerely,
Moffatt & Nichol, Inc.



Tim Blankenship, P.E.
Business Unit Leader

TKB:CJB:AW

Enclosure

Table 1 - Professional Fees

Part	Description	Type	Fee
1	2020 Biological Monitoring		
1a	Biological Survey Consultations	Lump Sum	\$3,016.00
1b	2020 Biological Monitoring	Lump Sum	\$6,228.00
1c	2020 Biological Monitoring Meetings	Hourly, Est.	\$1,985.00 500
2	2020 Physical Monitoring		
2a	2020 Post-Construction Physical Monitoring Coord.	Lump Sum	\$856.00
2b	2020 Post-Construction Physical Monitoring Report	Lump Sum	\$7,636.00 17,130
2c	2020 Physical Monitoring Meetings	Hourly, Est.	\$1,505.00 500
	Reimbursable Estimate		\$2,000 200
	TOTAL FEE ESTIMATE		\$23,226.00

\$18,430

